

Applicants: Thomas M. Jessell et al.
Serial No.: 09/654,462
Filed: September 1, 2000
Page 3

REMARKS

Claims 1-4 are pending in the subject application. Applicants have hereinabove canceled claim 4 without prejudice or disclaimer to their right to pursue the subject matter of this claim in a later-filed application. Applicants have also hereinabove amended claim 1. Support for the amendment to claim 1 may be found inter alia in the specification on page 3, lines 15-17 and in cancelled claim 4. These amendments do not involve any issue of new matter. Therefore, entry of this amendment is respectfully requested such that claims 1-3 will be pending and under examination.

In view of the amendments to the claims and the arguments set forth below, applicants maintain that the Examiner's rejection made in the April 13, 2005 Office Action has been overcome and respectfully request that the Examiner reconsider and withdraw same.

Provisional Obviousness-type Double Patenting Rejection

The Examiner provisionally rejected claims 1-4 under the judicially created doctrine of obviousness-type double patenting as allegedly being unpatentable over claims 1-3 of copending application no. 09/569,259. The Examiner stated that although the conflicting claims are not identical, they are not patentably distinct from each other because the claimed method of converting a neural stem cell into a ventral neuron is obvious over the claimed neural stem cell of U.S. Serial No. 09/569,259. The Examiner stated that this is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Applicants: Thomas M. Jessell et al.
Serial No.: 09/654,462
Filed: September 1, 2000
Page 4

The Examiner stated that claims 1-4 of the instant application are directed to a method of converting a neural stem cell into a ventral neuron, which comprises introducing into the neural stem cell, *ex vivo*, a nucleic acid which encodes homeodomain transcription factor Nkx6.1 protein, wherein the encoded protein is expressed in the stem cell so as to thereby convert the neural stem cell into the ventral neuron.

The Examiner stated that claim 1 of parent case 09/569,259 is directed to a neural stem cell which does not express homeodomain transcription factor Irx3 protein or homeodomain transcription factor Nkx2.2 protein comprising a retroviral expression system, wherein the retroviral expression system expresses homeodomain transcription factor Nkx6.1 protein.

The Examiner stated that the instantly claimed method of converting a neural stem cell into a ventral neuron is obvious over the neural stem cell because the claimed method is essentially a method of making the neural stem cell of claim 1 of parent case 09/569,259. The Examiner stated that once the genetically modified neural stem cell is produced, expression of the Nkx6.1 protein converts the neural stem cell into a ventral neuron, according to the claimed method.

The Examiner stated that although parent case 09/569,259 contains a restriction requirement, claims directed to the neural stem cell and a method of generating a motor neuron by introducing an Nkx6.1 gene into a neural stem cell were not restricted apart. The

Applicants: Thomas M. Jessell et al.
Serial No.: 09/654,462
Filed: September 1, 2000
Page 5

Examiner stated that both the neural stem cell and the method were included in the invention of Group I.

In response, applicants respectfully traverse. Nevertheless, applicants without conceding the correctness of the Examiner's position but to expedite prosecution of the subject application have hereinabove canceled claim 4 without prejudice or disclaimer to their right to pursue the subject matter of this claim in a later-filed application. Therefore, the rejection thereof is now moot. Applicants note that with this amendment the pending claims are no longer directed to a "motor neuron."

In addition, applicants without conceding the correctness of the Examiner's position but to expedite prosecution of the subject application have hereinabove amended claim 1 such that it no longer recites "ventral neuron" but instead now recites "V2 neuron".

Applicants contend that the invention set forth in claims 1-3, as amended, in the instant application is patentably distinct from the invention claimed in U.S. Serial No. 09/569,259.

Applicants respectfully point out that the neural stem cell claimed in U.S. Serial No. 09/569,259 necessarily produces a motor neuron. Applicants note that a motor neuron is generated from a stem cell when the stem cell expresses Nkx6.1 but not transcription factors Irx3 or Nkx2.2 (see page 44, line 29 - page 45, line 1; page 45, line 20 - page 46, line 15; page 46, lines 17-18; and Figure 5C of U.S. Serial No. 09/569,259). As the Examiner noted above, the neural stem cell of claim 1 of U.S. Serial No. 09/569,259 expresses

Applicants: Thomas M. Jessell et al.
Serial No.: 09/654,462
Filed: September 1, 2000
Page 6

Nkx6.1 but does not express Irx3 or Nkx2.2. Therefore, the neural stem cell claimed in U.S. Serial No. 09/569,259 necessarily produces a motor neuron as further evidenced by the language of claim 30 in U.S. Serial No. 09/569,259, which depends from claim 1 and recites:

"30. A method of determining whether a chemical compound affects the **generation of a motor neuron from a neural stem cell** which comprises:

a) **contacting the neural stem cell of claim 1** with the chemical compound under conditions such that in the absence of the compound the neural stem cell expresses homeodomain transcription factor Nkx6.1 protein and generates a motor neuron; and

b) determining whether a motor neuron is generated,

so as to thereby determine whether the chemical compound affects the generation of a motor neuron."

Applicants also point out that the claims of the instant application do not claim a motor neuron, but instead are directed to a "method of converting a neural stem cell into a V2 neuron."

Furthermore, since the neural stem cell claimed in U.S. Serial No. 09/569,259 does not express Irx3 or Nkx2.2 it could not produce a V2 neuron (see page 10, lines 2-9 and page 24, lines 1-4 and 16-18 of the instant specification; and page 45, lines 16-18 of U.S.

Applicants: Thomas M. Jessell et al.
Serial No.: 09/654,462
Filed: September 1, 2000
Page 7

Serial No. 09/569,259).

Accordingly, applicants maintain that the invention set forth in claims 1-3 of the instant application is patentably distinct from and not obvious over the claimed neural stem cell of U.S. Serial No. 09/569,259. Therefore, applicants respectfully request that the Examiner reconsider and withdraw this ground of rejection.

Summary

In view of the amendments and remarks made herein, applicants maintain that the claims pending in this application are in condition for allowance. Accordingly, allowance is respectfully requested.

If a telephone interview would be of assistance in advancing prosecution of the subject application, applicants' undersigned attorney invites the Examiner to telephone him at the number provided below.

Applicants: Thomas M. Jessell et al.
Serial No.: 09/654,462
Filed: September 1, 2000
Page 8



No fee, other than the enclosed \$510.00 fee for a three-month extension of time, is deemed necessary in connection with the filing of this Amendment. However, if any fee is required, authorization is hereby given to charge the amount of such fee to Deposit Account No. 03-3125.

Respectfully submitted,

A handwritten signature of John P. White in black ink, written over a horizontal line.

John P. White
Registration No. 28,678
Attorney for Applicant(s)
Cooper & Dunham, LLP
1185 Avenue of the Americas
New York, New York 10036
(212) 278-0400

I hereby certify that this correspondence is being deposited this date with the U.S. Postal Service with sufficient postage as first class mail in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, V.A. 22313-1450.

A handwritten signature of John P. White in black ink, written over a horizontal line.

John P. White
Reg. No. 28,678

10/13/05

Date